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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,367	08/15/2003	Richard H. Schlosberg	2001B052A/2	2531

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EXAMINER	
STOCKTON, LAURA LYNNE	

ART UNIT	PAPER NUMBER
1626	

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07/22/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/642,367	SCHLOSBERG ET AL.	
	Examiner	Art Unit	
	Laura L. Stockton, Ph.D.	1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 April 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-15,17-26,28-39,41-46 and 49-57* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *49* is/are allowed.

6)☒ Claim(s) *1,2,4-15,17-26,28-39,41-46 and 50-57* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1, 2, 4-15, 17-26, 28-39, 41-46 and 49-57 are pending in the application.

Election/Restrictions

Applicant's election with traverse of Group I, directed to a process of making (claims 1-46), in the reply filed on January 12, 2006 was acknowledged in a previous Office Action. The requirement was deemed proper and therefore made FINAL in a previous Office Action.

Claims 47 and 48 were withdrawn (now cancelled) from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention. Applicant timely traversed the restriction (election) requirement in the reply filed on January 12, 2006.

Rejections made in the previous Office Action that do not appear below have been withdrawn per Applicant's arguments. Therefore, arguments pertaining to these rejections will not be addressed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 4-15, 17-26, 28-39, 41-46 and 50-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Pacheco et al.** {U.S. Pat. 5,489,703} in view of the combination of teachings in **Emmons et al.** {U.S. Pat. 3,535,341}, **McClellan** {U.S. Pat. 2,873,282}, **Masahiro et al.** {JP 63-238043}, **Haruyuki et**

al. {JP 03-109358} and **Tojo et al.** {U.S. Pat. 5,847,189}.

Determination of the scope and content of the prior art (MPEP §2141.01)

Applicant claims a process of making dialkyl carbonate and a diol from alkylene oxide, carbon dioxide and an aliphatic monohydric alcohol comprising (a) reacting an alkylene oxide with carbon dioxide in the presence of a carbonation catalyst selected from carbonates and bicarbonates of quaternary ammonium bases to provide a crude cyclic carbonate and (b) reacting said cyclic carbonate with an aliphatic monohydric alcohol in the presence of a catalyst.

Pacheco et al. (see entire reference and especially columns 7, 9 and 10) teach a process of making dialkyl carbonate and a diol from alkylene oxide, carbon dioxide and an aliphatic monohydric alcohol in the presence of quarternary ammonium compounds for each step.

Ascertainment of the difference between the prior art and the claims (MPEP §2141.02)

The difference between the process of Pacheco et al. and the process instantly claimed is that Pacheco et al. generically describe the instant quaternary ammonium catalysts for each of the claimed steps (a) and (b).

However, **Emmons et al.** (column 1, lines 35-53) and **McClellan** (columns 1 and 2) each teach that it is known to use quaternary ammonium compounds as catalysts in processes of making alkylene carbonates (Applicant's cyclic carbonate produced in step a). Additionally, **Masahiro et al.** (see abstract), **Haruyuki et al.** (see abstract) and **Tojo et al.** (see entire document; especially Example 1 in columns 35-36) each teach that it is known to use quaternary ammonium compounds as catalysts in processes of making a dialkyl carbonate and a diol from reacting a cyclic carbonate and an alcohol (Applicant's dialkyl carbonate and diol produced in step b).

Finding of prima facie obviousness--rational and motivation (MPEP §2142-2413)

The claimed process is no more than a selective combination of prior art teachings done in a manner obvious to one of ordinary skill in the art since each step of the process appears to be relatively complete in itself and there is no indication of an interaction between steps of such a type that would lead one of ordinary skill in the art to doubt that a substitution of alternative steps known to the art could be made. *In re Mostovych*, 144 USPQ 38 (1964).

One skilled in the art would have been motivated to utilize the process taught by Pacheco et al., especially in view of the teachings in Emmons et al., McClellan, Masahiro et al., Haruyuki et al. and Tojo et al., to arrive at the instant claimed process with the expectation of obtaining a dialkyl carbonate and a diol. Therefore, the instant claimed process would have been suggested to one skilled in the art.

Response to Arguments

Applicant's arguments filed April 7, 2008 have been fully considered but they are not persuasive.

Applicant argues that: (1) there is no disclosure in Pacheco et al. of using a crude alkylene carbonate stream as the reactant stream for transesterification of alkylene carbonate with alkanols to produce dialkyl carbonates; (2) there is no disclosure in McClellan of the further processing of any alkylene carbonate or alkylene carbonate-containing stream produced in accordance with the McClellan procedure; (3) Emmons et al. disclose nothing about what is or can be done with the crude reaction product of the alkylene oxide/CO_2 reaction; (4) there is no disclosure in either Masahiro et al. or Haruyuki et al. concerning how the cyclic carbonate has been prepared; and (5) there is no disclosure in Tojo et al. concerning the source or the nature of the feed stream containing the cyclic carbonate used.

Applicant's arguments have been considered but have not been found persuasive. Applicant argues that there is no disclosure in Pacheco et al. of using a crude alkylene carbonate stream as the reactant stream for transesterification of alkylene carbonate with alkanols to produce dialkyl carbonates. As stated above, Pacheco et al. teach a process of making dialkyl carbonate and a diol from alkylene oxide, carbon dioxide and an aliphatic monohydric alcohol in the presence of quarternary ammonium compounds for each step. Pacheco et al. do teach using the alkylene carbonate as the reactant for the transesterification of alkylene carbonate with alkanols to produce dialkyl carbonates (column 9, lines 11-61). Further, Emmons et al., McClellan, Masahiro et al., Haruyuki et al. and Tojo et al. are all secondary references and as such are not required to have every limit recited in the claims.

Applicant argues that: (1) there is nothing in any of the applied references which would suggest that the alkylene (cyclic) carbonate-containing crude product stream from the first step of the instant claimed process must be used in the second transesterification step without separating either the alkylene carbonate or the carbonation catalyst (2) there is no disclosure or suggestion of using the same carbonation catalyst for the transesterification reaction; and (3) none of the cited prior art suggest the selection of a halide-free carbonation catalyst.

All of Applicant's arguments have been considered but have not been found persuasive. Applicant argues that there is nothing in any of the applied references which would suggest that the alkylene (cyclic) carbonate-containing crude product stream from the first step of the instant claimed process must be used in the second transesterification step without separating either the alkylene carbonate or the

carbonation catalyst. As stated above, Pacheco et al. do teach using the alkylene carbonate as the reactant for the transesterification of alkylene carbonate with alkanols to produce dialkyl carbonates (column 9, lines 11-61). Applicant argues that there is no disclosure or suggestion of using the same carbonation catalyst for the transesterification reaction and none of the cited prior art suggest the selection of a halide-free carbonation catalyst. In response, the cited prior art list catalysts that are used in carbonation reactions and transesterification reactions. See, for example, McClellan (column 1, lines 41-72; and column 2, lines 1-26) and Pacheco (column 52-61). Further, there are a number of carbonation catalyst listed in the cited prior art which do not contain a halogen. See, for example, Emmons et al. (column 1, lines 35-47). For all the reasons given above, the rejection is deemed proper and therefore, the rejection is maintained.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be

directed to Laura L. Stockton whose telephone number is (571) 272-0710. The examiner can normally be reached on Monday-Friday from 6:15 am to 2:45 pm. If the examiner is out of the Office, the examiner's supervisor, Joseph McKane, can be reached on (571) 272-0699.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

The Official fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

/Laura L. Stockton/
Laura L. Stockton, Ph.D.
Patent Examiner
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July 22, 2008